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Claim Listing

1–15. (cancelled)

16. (new) A method for threading a web in the reeling of a paper or board web, comprising the steps of:

passing a tail threading strip cut from a paper or board web into a reeling nip between a reeling drum having a circumferential surface and a reel spool, to form a web roll on the reel spool;

conducting the tail threading strip on the circumferential surface of the reeling drum and passing the the paper or board web into said reeling nip between the reeling drum and the reel spool by attachment of the tail threading strip to a suction zone of the reel drum which extends entirely around the circumferential surface of the reel drum so that the tail threading strip is conducted directly along the suction zone in an area where a full-width web runs during reeling; and

drawing air from an interior volume of the reeling drum to create the suction zone by connecting the interior volume to a source of a lower static pressure outside the reeling drum, wherein a boundary layer of air, produced by the rotating reeling drum and motion of the tail threading strip, is substantially removed by a suction effect provided through the suction zone and which suction effect extends beyond the boundary layer.

17. (new) The method of claim 16 wherein the tail strip of the web is conducted to the reeling nip by the suction zone and wherein the suction zone is situated closely spaced from one end of the reeling drum.

18. (new) A reeling device for threading a web in the reeling of a paper or board web, comprising:

a reeling drum, having a drum interior and a cylindrical reeling surface, portions of the cylindrical surface forming an area where a full-width web of a first selected width is arranged to run during reeling, the cylindrical surface defining a circumference;

a reel spool forming a nip with the reel drum, the reel spool arranged to receive the paper or board web from the portions of the cylindrical surface forming an area where a full-width web is arranged to run, to form a web roll;

portions of the reeling drum forming a plurality of suction apertures extending between the drum interior and the reeling surface to provide a suction effect on the surface of the reeling drum, the suction apertures forming a suction zone which extends around the entire circumference of the reeling drum, and wherein the suction zone forms a part of the portions of the cylindrical surface forming the area where a full-width web is arranged to run during reeling; and

wherein the drum interior is connected to a source of a lower static pressure outside the reeling drum, the lower static pressure selected so that the suction zone extends beyond a boundary layer which is produced by rotation of the reeling drum and holds a tail threading strip of a second selected width, cut from the paper or board web full width.

19. (new) The device of claim 18, wherein the portions of the cylindrical surface forming an area where a full-width web is arranged to run during reeling form a plurality of circumferential grooves spaced along an axis defined by the cylindrical reeling surface; and wherein the suction apertures of the suction zone are situated at said grooves and in said grooves.

20. (new) The device of claim 18, wherein the circumference of the cylindrical reeling surface defines a circumferential direction, and the suction apertures of the suction zone are arranged with 15–25 mm spacing in the circumferential direction, and 6–25 mm spacing transverse to the circumferential direction.

21. (new) The device of claim 18 wherein the circumference of the cylindrical reeling surface defines a circumferential direction, and the distance between the suction holes in the circumferential direction of the reeling drum is about 10–100 mm, and the diameter of the suction apertures is 1–10 mm.

22. (new) The device of claim 18 wherein the circumference of the cylindrical reeling surface defines a circumferential direction, and wherein the suction zone has a width transverse to the circumferential direction which is smaller than the first selected width of the web.

23. (new) The device of claim 18 wherein the suction zone has a width which is two to four times the second selected width of the tail threading strip.

24. (new) The device of claim 18 wherein the reeling drum has a first end of the reeling drum and a second end of the reeling drum and the cylindrical reeling surface positioned therebetween, and wherein the suction zone is closely spaced from one of the first end or the second end of the reeling drum.

25. (new) The device of claim 18, wherein the source of a lower static pressure outside the reeling drum is a blower connected to the interior by a tube connected to a hole situated in an axle of the reeling drum, and through which hole and tube air is transported to the blower.

26. (new) The device of claim 18, wherein the source of a lower static pressure outside the reeling drum is connected through an end of the reeling drum by a suction box.

27. (new) A method for threading a web in the reeling of a paper or board web, comprising the steps of:

passing a tail threading strip cut from a paper or board web into a reeling nip between a reeling drum having a circumferential surface, and a reel spool, to form a web roll on the reel spool;

conducting the tail threading strip on the circumferential surface of the reeling drum and passing the paper or board web into said reeling nip between the reeling drum and the reel spool by attachment of the tail threading strip to a suction zone of the reel drum which extends entirely around the circumferential surface of the reel drum so that the tail threading strip is conducted directly along the suction zone situated on the circumferential surface of the reeling drum in an area where a full-width web runs during reeling;

drawing air through a plurality of suction apertures 1–10 mm in diameter, said apertures extending between an interior of the drum and the circumferential surface and connected to a source of a lower static pressure outside the reeling drum, wherein the air is drawn through said apertures at a speed of 20–200 m/s to provide the suction effect on the circumferential surface of the reeling drum, the suction apertures forming the suction zone; and

wherein a boundary layer of air, produced by the rotating reeling drum and motion of the tail threading strip is substantially removed by a suction effect provided through the suction zone and which suction effect extends beyond the boundary layer.

28. (new) The method of claim 27, wherein the tail strip of the web is conducted to the reeling nip by the suction zone and wherein the suction zone is situated closely spaced from one end of the reeling drum.

29. (new) The method of claim 27, wherein the circumferential surface has portions forming a plurality of circumferential grooves spaced along an axis defined by the circumferential surface, and wherein the suction apertures of the suction zone are situated at said grooves and in said grooves.

30. (new) The method of claim 27 wherein the circumference of the cylindrical reeling surface defines a circumferential direction, and wherein the suction zone has a width transverse to the circumferential direction which is 2–4 times the width of the tail threading strip, and the suction zone has a width transverse to the circumferential direction which is smaller than the area where the full-width web runs during reeling.

31. (new) The method of claim 27 wherein the reeling drum has a first end of the reeling drum and a second end of the reeling drum and the cylindrical reeling surface is positioned therebetween, and wherein the suction zone is closely spaced from one of the first end or the second end of the reeling drum.

32. (new) The method of claim 27 wherein the air is drawn through said apertures at a speed of 50–100 m/s to provide the suction effect on the circumferential surface of the reeling drum, the suction apertures forming the suction zone.

33. (new) The method of claim 27, wherein the source of a lower static pressure outside the reeling drum is connected through an end of the reeling drum by a suction box.